

REMARKS/ARGUMENT

Regarding the Objections to the Specification:

The Abstract has been amended to better reflect the contents of the disclosure. However, applicants respectfully traverse the Examiner's requirement to delete reference to the non-elected method. The requirement for an Abstract is contained in 37 CFR 1.72(b) which provides:

A brief abstract of the technical disclosure in the specification must commence on a separate sheet, preferably following the claims, under the heading "Abstract" or "Abstract of the Disclosure." . . . The purpose of the abstract is to enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure.

Clearly, the focus is on the content of the technical disclosure and not the claims. Since there is disclosure of a method, it is respectfully submitted that reference to it in the abstract is proper. Applicants' representative is aware of no authority for the Examiner's requirement that it be deleted.

Regarding the Requirement for Reference Numerals, etc.:

Applicants respectfully decline to comply with the Examiner's request for addition of reference numerals to the claims (or for a tabulation thereof), and for a statement showing support in the specification for the claimed subject matter. These requests are unreasonably burdensome.

Pursuant to M.P.E.P. §608.01(m), use of reference numerals in claims is permitted, but is entirely optional. Applicants' representative is not aware of any rule which allows the Examiner to require use of reference numerals, either in the claims themselves, or in an accompanying tabulation.

As to the request to support the claim recitations, there is no pending rejection based on 35 U.S.C. 112, first paragraph, and the only basis for the pending rejection under 35 U.S.C. 112, *second paragraph*, is that the intended scope of the claims is not clear. If the Examiner believes that any specific claim limitation does not meet statutory requirements, he is respectfully requested to articulate his concern specifically so it can be addressed without imposing unnecessary burden and expense on applicants.

Regarding the Claims in General:

Claims 1-3 and 5-24 remain pending. Claims 1-3 and 5-14 are presently before the Examiner for consideration, claims 15-24 having been withdrawn as non-elected.

By the present amendments, claim 4 has been canceled without prejudice, and the feature recited therein has been incorporated into claim 1. Claims 5, 7, 8, 10, and 11, previously dependent on claim 4, have been corrected accordingly. Claim 1 has been further amended to address the rejection under 35 U.S.C. 112, as discussed below, and claim 7 has been further amended to correct a minor grammatical error.

No concern as to introduction of new matter can arise since claim 4 was part of the application as originally filed.

Regarding the Rejection under 35 U.S.C. 112:

Applicants respectfully traverse this rejection. Independent claim 1 is specifically directed to a “die ejector *system*”, and explicitly recites a combination of several structural elements. Claims in this form are both customary and entirely proper. Likewise, claim 1 recites how the structural elements interact with an object, i.e., a die adhesively attached to a carrier film. Again, it is both customary and entirely proper to draft claims in this manner.

The “inconsistency” envisaged by the Examiner is not apparent to applicants’ representative. The claim defines a combination of elements, and recites how they interact with the real world. Moreover, the Examiner himself has correctly apprehended that the claimed subject matter is what he as refers to as a “subcombination”.

As explained below, the prior art cited by the Examiner does not disclose, teach, or suggest the claimed combination of elements. If a further search reveals a reference which does show or suggest the claimed combination, even interacting with some object other than a die attached to an adhesive file, that reference should be cited so that its pertinency under 35 U.S.C. 102 and 103 can be addressed. Of course, if the Examiner chooses to “give no patentable weight to a statement of the material worked on”, that can be addressed as well.

Despite the foregoing, in an effort to advance the prosecution, claim 1 has been amended to express in somewhat different words the interaction of the claimed apparatus and the die. Perhaps

this will eliminate any inconsistency or ambiguity which the Examiner perceives in the wording of claim 1 as originally presented. The Examiner's attention is, however, respectfully directed to the fact that the definition of the structure recited in claim 1 has not been changed, except to the extent that the limitation of canceled claim 4 has been incorporated therein. If the Examiner still sees a problem in the wording of claim 1, he is respectfully requested to suggest alternative wording.

Regarding the Prior Art Rejections:

Reconsideration and withdrawal of these rejections in view of the amendments to claim 1 discussed below are respectfully requested.

As the Examiner will appreciate, the rejection of claims 1 and 12 under 35 U.S.C. 102 as being anticipated by Safabakhsh et al. U.S. patent 4,990,051 (Safabakhsh) is rendered moot by the amendment of claim 1 to incorporate the flexure bearing previously recited in now canceled claim 4. Accordingly, the rejections of claims 1 and 12 will not be addressed. Instead, the rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Safabakhsh in view of Pan et al. U.S. patent 5,492,313 (Pan) will be treated as the "base claim" rejection.

Claim 1 as amended reads as follows:

A die ejector system for removing a die from an adhesive surface, comprising:

an ejector tool that is operative to move relative to a position at which a die on an adhesive surface is located, whereby to push the die;

a shaft for holding the ejector tool;

a linear motor comprising a forcer and a stator, wherein the forcer is coupled to the shaft and is movable relative to the stator;

a flexure bearing coupled to the shaft for guiding movement of the ejector tool relative to the die mounting location; and

a die pick-up device adapted for removal of a die from the adhesive surface at the die mounting location which has been pushed by the ejector tool.

The Examiner correctly points out that Safabakhsh does not disclose, teach, or suggest first and second flexure bearings, and seeks to remedy this deficiency by reference to Pan. Combining these references, however, is not proper. In addition to the flexure bearing now recited in claim 1, there is also a requirement for the bearing to be "coupled to the shaft". Such structure (i.e. a flexure bearing attached to the shaft), is not disclosed, taught or suggested in Safabakhsh, nor is there any motivation to modify Safabakhsh to provide such a structure, either in the reference itself or in Pan.

Safabakhsh is concerned with improving the reliability of die transfer from an adhesive film. According to the patent, there is provided what amounts to a telescoping mechanism comprised of an outer collar 46 and an inner coaxial ejection pin 39. The collar engages the film as a first step to pre-peel a selected die 42 from the film 16. The film is then engaged by the die eject pin 39 to complete transfer of the selected die.

Guide pin 39 is supported for axial movement by ring bearings 56 fitted in bearing collars 57 and 58 (see Col. 4, lines 61-62). The ring bearings 56 are not "coupled to the shaft", but instead, the die eject pin 39 is slidable relative to the bearings as in conventional shafts of the prior art.

Pan, on the other hand, is concerned with an entirely different, and entirely more critical application, namely long-life, high-reliability cryocoolers for infrared sensor systems on satellites. These devices include reciprocating shafts which must be precisely supported against any radial movement relative to the longitudinal axis. The mechanism must be capable of reliable operation over 10^9 cycles.

According to Pan, the criteria for a shaft bearing capable of meeting these requirements include a high radial to axial stiffness ratio, low operating stress, long life, high reliability and space-qualified design and construction. The solution proposed by Pan is a tangential linear flexure bearing design utilizing a translating spider diaphragm having three circumferential tangential cantilever flexure blades.

A person skilled in the art to which the *present* invention pertains would never see a need to use Pan's bearing in Safabakhsh's die ejector apparatus. Safabakhsh expresses no any concern about problems in the bearing system. The entire teaching in this patent is about the two-stage mechanism described above. Likewise, Pan does not disclose, teach, or suggest that the disclosed flexure bearing structure would have *reasonable* applicability to non-critical, average-reliability uses.

If one wanted to change the bearing structure of Safabakhsh for some reason, the obvious choice would not be a flexure bearing coupled to the shaft, but instead a conventional sliding bearing equivalent to ring bearings 56 that are coupled only to a housing such as the bearing collars 57 and 58 so that the shaft and bearing are slidable relative to each other. This is a perfect example of the fact that just because something can be done, does not make it obvious to do so. See: M.P.E.P. § 2143.01 III; *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Claims 2, 3, and 5-14 are directly or indirectly dependent on claim 1, which is believed to be allowable for the reasons stated above. Claims 2, 3, and 14 are believed to be allowable for the same reasons. In addition, these claims recite features which, in combination with the features of their respective parent claims are neither taught nor suggested in Safabakhsh, or any of the secondary references, whether considered alone or in combination.

Further in this regard, the Examiner's attention is respectfully directed to claim 5, which calls for "a second flexure bearing that is coupled to the shaft", and claim 6 which is dependent on claim 5, and further requires that "... the flexure bearing and the second flexure bearing are positioned on opposite sides of the linear motor."

With reference to claim 5, Pan does not disclose "first and second flexure bearings positioned opposite sides (sic)", as the Examiner asserts. Col. 5, line 54 to Col. 6, line 5 do not even describe two flexure bearings. That passage describes a reciprocating hub spacer (40) (see FIG. 2) rigidly attached to diaphragm portions 18, 20 of a flexure bearing (see FIG. 1, wherein the combination is illustrated in FIG. 3).

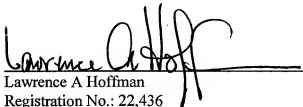
With reference to claim 6, in Figure 3 of Safabakhsh, the ring bearings 56 are positioned along the housing 32 near to the tip of the die eject pin 39. The actuator is not shown, but would have to be outside the drawing. Hence, the bearings 56 are not positioned on opposite sides of the actuator. They are on the same side of the actuator. Pan likewise teaches nothing about positioning bearings on opposite sides of an actuator.

Conclusion:

In view of the foregoing, favorable reconsideration and allowance of this application are respectfully solicited.

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Respectfully submitted,


Lawrence A Hoffman

Registration No.: 22,436

OSTROLENK, FABER, GERB & SOFFEN, LLP

1180 Avenue of the Americas

New York, New York 10036-8403

Telephone: (212) 382-0700

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